

Claims

[c1] What is claimed is:

1.A coaxial cable connector for electrically connecting an inductive transformer with a coaxial cable in a downhole tool, the connector comprising:

a tube and a generally coaxial center conductor, the tube comprising a first end and a second end, a head on the first end, the head in electrical communication with the inductive transformer, the second end in electrical communication with an internal diameter of a conductive tube of the coaxial cable;

the coaxial center conductor passing through the tube, electrically insulated from the tube, and in electrical communication with a coil in the inductive transformer and a conductive core of the coaxial cable.

[c2] 2.The coaxial cable connector of claim 1 wherein the head is diametrically larger than the tube.

[c3] 3.The coaxial cable connector of claim 1 wherein the second end forms a plurality of bulbous pliant tabs extending from the tube.

[c4] 4.The coaxial cable connector of claim 3 wherein an

outer diameter of the bulbous pliant tabs is larger than the internal diameter of the conductive tube.

- [c5] 5.The coaxial cable connector of claim 1 wherein the head forms a saddle, the saddle shaped to conform to an outer housing of the inductive transformer.
- [c6] 6.The coaxial cable connector of claim 5 wherein the saddle is welded to the outer housing of the inductive transformer.
- [c7] 7.The coaxial cable connector of claim 1 wherein the head has an outer flat sidewall.
- [c8] 8.The coaxial cable connector of claim 7 wherein a terminal end of the coil in the inductive transformer is welded to the outer flat sidewall.
- [c9] 9.The coaxial cable connector of claim 1 wherein the head has an open ended protuberance, a portion of the open ended protuberance cut away, the coaxial center conductor passing through the cut away portion of the open ended protuberance.
- [c10] 10.The coaxial cable connector of claim 1 wherein the tube has grooves adapted to house a sealing mechanism.
- [c11] 11.The coaxial cable connector of claim 10 wherein the sealing mechanism comprises o-rings.

- [c12] 12.The coaxial cable connector of claim 1 wherein the connector is made of a metal.
- [c13] 13.The coaxial cable connector of claim 12 wherein the metal is selected from the group consisting of steel, titanium, chrome, nickel, aluminum, iron, copper, tin, and lead.
- [c14] 14.The coaxial cable connector of claim 13 wherein the metal is steel is selected from the group consisting of viscount 44, D2, stainless steel, tool steel, and 4100 series steels.
- [c15] 15.A downhole tool comprising:
a coaxial cable connector for electrically connecting an inductive transformer with a coaxial cable, the connector comprising a tube and a generally coaxial center conductor, the tube comprising a first end and a second end, a head on the first end, the head in electrical communication with the inductive transformer, the second end in electrical communication with an internal diameter of a conductive tube of the coaxial cable, the inductive transformer and the coaxial cable disposed within the downhole tool;
the coaxial center conductor passing through the tube, electrically insulated from the tube, and in electrical

communication with a coil in the inductive transformer and a conductive core of the coaxial cable.

- [c16] 16.The downhole tool of claim 15 wherein the head is diametrically larger than the tube.
- [c17] 17.The downhole tool of claim 15 wherein the second end of the coaxial cable connector forms a plurality of bulbous pliant tabs extending from the tube.
- [c18] 18.The downhole tool of claim 17 wherein an outer diameter of the bulbous pliant tabs is larger than the internal diameter of the coaxial cable into which the terminal end is inserted.
- [c19] 19.The downhole tool of claim 15 wherein the coaxial cable connector head forms a saddle, the saddle shaped to conform to an outer housing of the inductive transformer.
- [c20] 20.The downhole tool of claim 19 wherein the saddle is welded to the outer housing of the inductive transformer.
- [c21] 21.The downhole tool of claim 15 wherein the coaxial cable connector head has an outer flat sidewall.
- [c22] 22.The downhole tool of claim 21 wherein a terminal end of the coil in the inductive transformer is welded to the

coaxial cable connector outer flat sidewall.

- [c23] 23.The downhole tool of claim 15 wherein the coaxial cable connector head has an open ended protuberance, a portion of the open ended protuberance cut away, the coaxial center conductor passing through the cut away portion of the open ended protuberance.
- [c24] 24.The downhole tool of claim 15 wherein the coaxial cable connector tube has grooves adapted to house a sealing mechanism.
- [c25] 25.The downhole tool of claim 24 wherein the sealing mechanism comprises o-rings.
- [c26] 26.The downhole tool of claim 15 wherein the coaxial cable connector is made of a metal.
- [c27] 27.The downhole tool of claim 26 wherein the metal is selected from the group consisting of steel, titanium, chrome, nickel, aluminum, iron, copper, tin, and lead.
- [c28] 28.The downhole tool of claim 27 wherein the metal is steel is selected from the group consisting of viscount 44, D2, stainless steel, tool steel, and 4100 series steels.